

## Section 5

# Existing MMS Payment Regulations

## Valuation Standards (*CFR Ch II 206.102*)

(h):

“Notwithstanding any other provision of this section,  
under no circumstances shall the value of production,  
for royalty purposes, be less than the gross proceeds  
accruing to the lessee ...”

Gross Proceeds: “... the total monies and other consideration  
accruing to an oil and gas lessee ...”

(j):

“Value shall be based on the highest price a prudent  
lessee can receive ...”



# United States Crude Oil Royalty Payment Regulations

Suggested Modifications Presented 9/5/96

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U.S. Crude Oil Payment Regulation Meeting 9/5/96

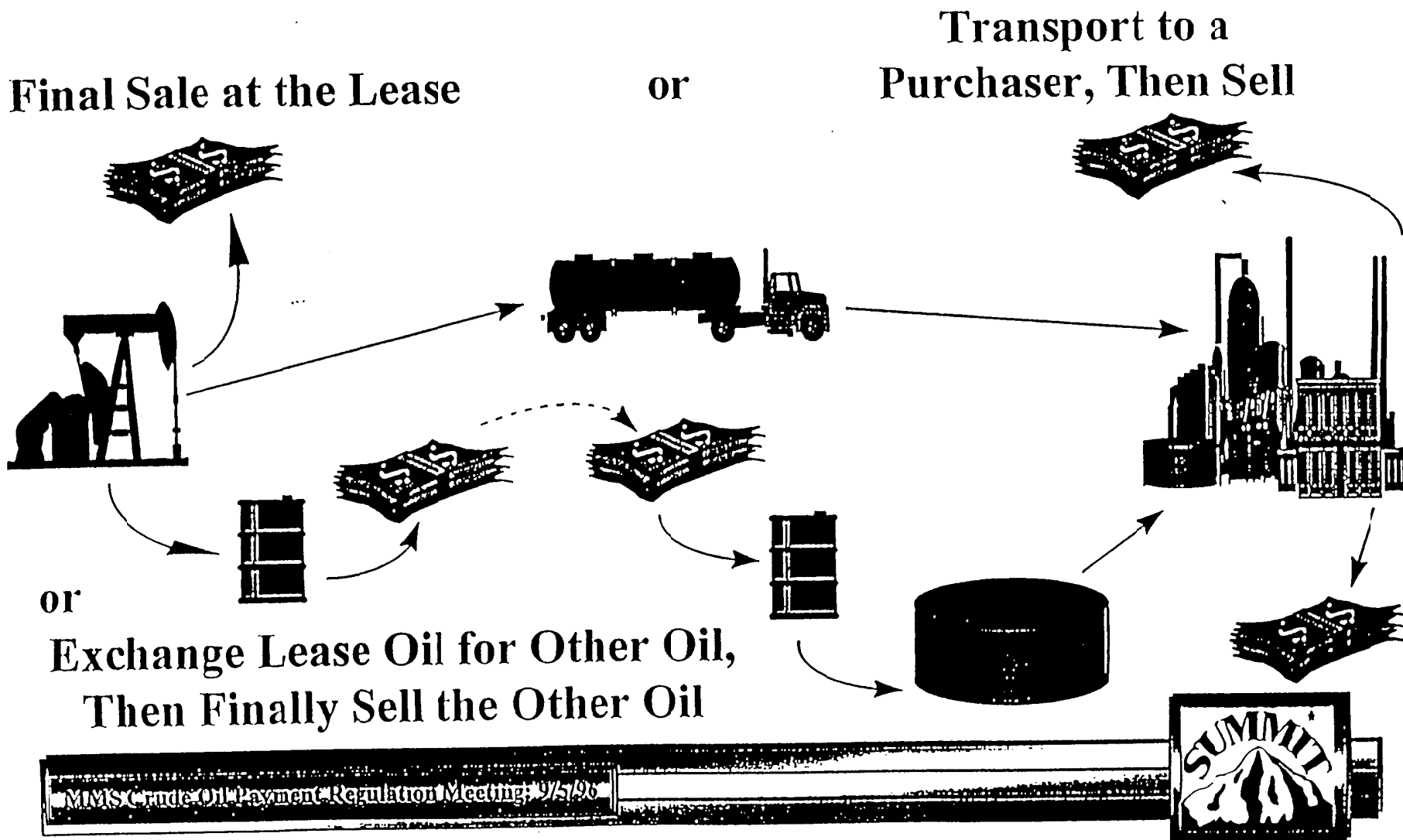


# Payment Regulation Discussion Outline

- Current Crude Oil Marketing Practices
- Goals of New Payment Regulations
- Conceptual Basis
- Suggested Changes to Existing Regulations
- Implementation of Suggested Changes
- Administration of New System



# Three Basic Methods to Market Lease Crude Oil



**Mobil Transaction Summary to Convert Mobil Lease Crude Into Chalmette Refinery Supply**

1. Mobil "Sells" New Mexico oil to Navajo at the lease
2. Navajo "Sells" Midland oil to Mobil
3. Mobil grade-trades Midland for Cushing
4. Mobil grade-trades Cushing for St. James
5. Mobil "Buys" offshore oil from Shell at first onshore pt.
6. Mobil "Sells" St. James oil to Shell

Shell enters into similar series of exchanges with Mobil and Amoco to convert offshore lease crude oil into Deer Park refinery supply.

**SUMMIT**

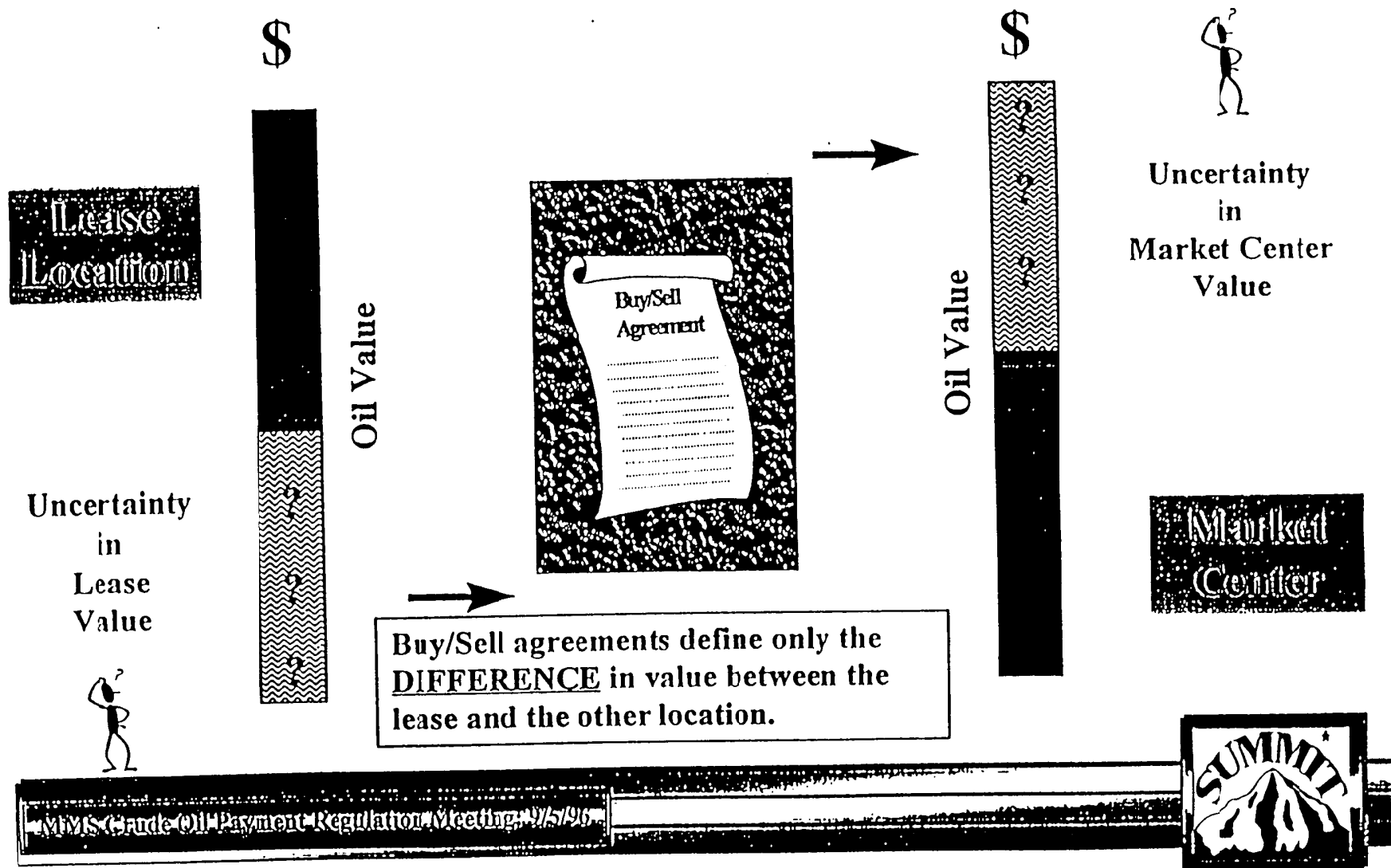
**VIMS Crude Oil Payment Regulation Meeting: 9/5/96**

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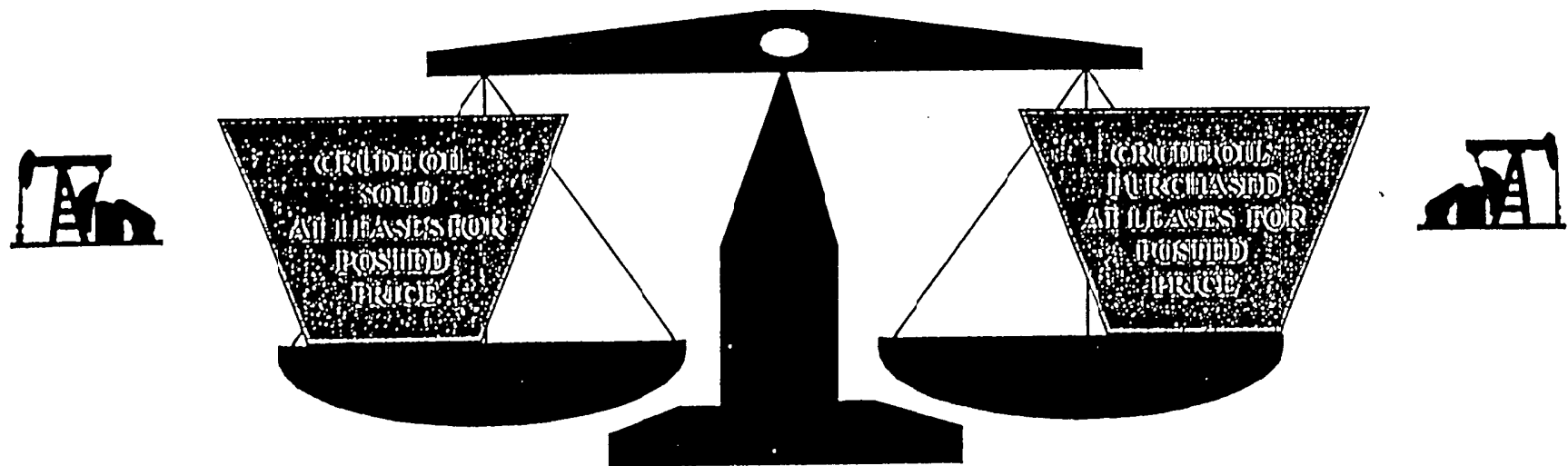
## Shell



# Buy/Sell Agreements Do Not Show Actual Market Value



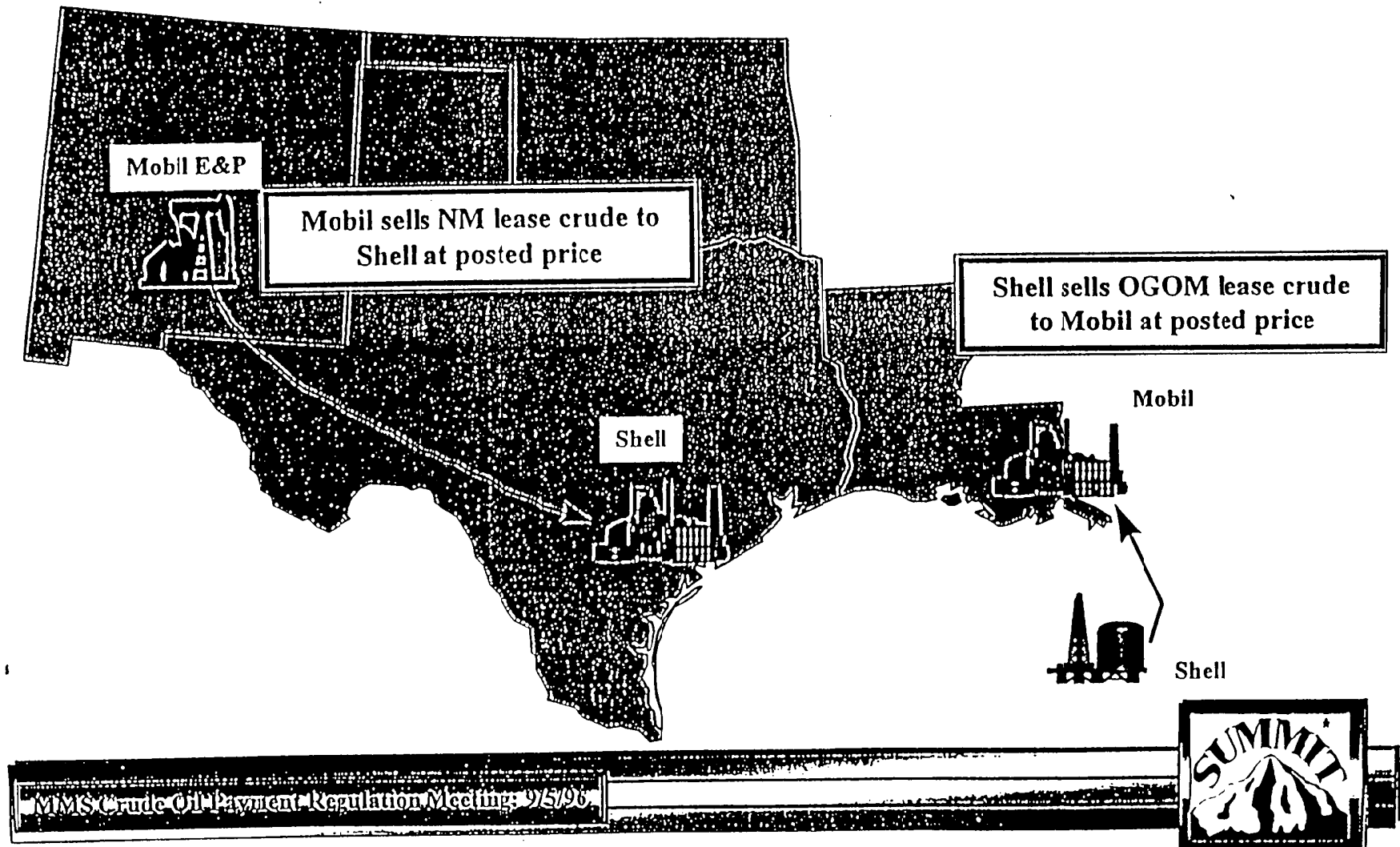
# *“Overall Balance”:* Implied Exchange Transaction



As long as two companies sell approximately equal volumes to each other, the *absolute* price isn't important. In fact, because of reduced royalty and severance tax payments, the volumes don't even have to be exactly equal for both parties to benefit from setting the posted lease prices below full value. There may not even be written contracts reflecting the exchanges.



# Example of Overall Balance



# Crude Oil Value Affected By Quality

- API gravity scales in Posted Prices are sometimes used
- Most actual lease marketing contracts “*deem*” API gravity when deductions are applied to posted price bases
- Actual deductions for crude oil quality are usually negotiated
- Some market centers have “gravity banks” to adjust price for quality



# Summary of Current Crude Oil Marketing Practices

- Few truly outright sales by major producers
- Independents commonly sell outright
  - Many Independents use sophisticated sales
- Most Majors utilize buy/sell exchanges
- Overall Balance concept used by several Majors
- Price adjustments for quality are commonly negotiated on each contract



# Goals of Revised Regulations

- Fair to Payors and Federal Government
  - Meets obligations of lease agreements
- Understandable
  - To Payors
  - To MMS Auditors
- Minimal changes to existing system
- Compatible with Payors' existing systems
- Compatible with actual marketplace
- Difficult for Payors to manipulate



# Current MMS Crude Oil Payment Regulations - Issues

- Current regulations require payment on full value received, but changes could better reflect actual marketing practices
  - Current reg's seem to assume that posted prices may represent "market value" of lease crude oil
    - Posted prices can be arbitrarily set by Payors
  - Current reg's do not readily acknowledge common buy/sell contracts or non-arms-length sales
    - "First Sale" price can easily be manipulated to hide actual value received for lease crude oil



# Challenges in Developing Revised Payment Regulations

- Any system can be manipulated
- There is no “perfect” system
- Balance between:
  - Accuracy in recognizing full value received
  - Ease in auditing and compliance monitoring



# Two Conceptual Approaches to Royalty Payment Obligations:

- **Actual value received for oil at the lease:**
  - Recognizes full value obtained by prudent oil producers
  - Difficult to audit and detect underpayments
- **General “Market Value” basis:**
  - Easy to ensure that payments equal value basis
  - Difficult or impossible to determine the appropriate “Market Value” without access to actual marketing arrangements



# **“Actual Value” Payment Issues**

- **Requires complete disclosure of marketing arrangements by Payor**
  - **Ensure that sales were arms-length**
    - **No other value received in return for lease crude oil**
      - **Includes service discounts, discounts on other sales, etc.**
    - **No affiliation between Buyer and Seller**
- **Actual Value may be sales or exchanges**
  - **How far downstream to follow exchanges?**
- **Easy compliance for some payors**





# **“Actual Value” Payment Issues**

## **(cont.)**

- **Reporting and paying federal royalties on actual receipts may divulge proprietary marketing arrangements**
  - **Some states require payment of all royalties on the same price**
- **Burden of Proof must be on Payor to show actual value received**
  - **Marketing arrangements must meet several strict audit tests**



# **“Market Value” Payment Issues**

- **Option 1: Purely theoretical application**
  - **“Net-back” calculation**
    - **Market center spot value**
      - What basis?
    - **Published transportation deduction**
      - Potential overstatement of transport deduction
    - **Quality deduction**
      - What basis for determining quality valuation?
  - **Assumes that MMS knows at least as much about specific lease crude oil value as the producers**
    - **Difficult without access to actual market data**



# **“Market Value” Payment Issues**

## **(cont.)**

- **Option 2 (*recommended*): Use of Actual data to compile an “average” for each area**
  - Should be based on “exchange pricing” rather than absolute
    - Exchange differences do not change often
  - Actual market factors in known areas can be extended to develop theoretical values for application in cases where no actual values are reported



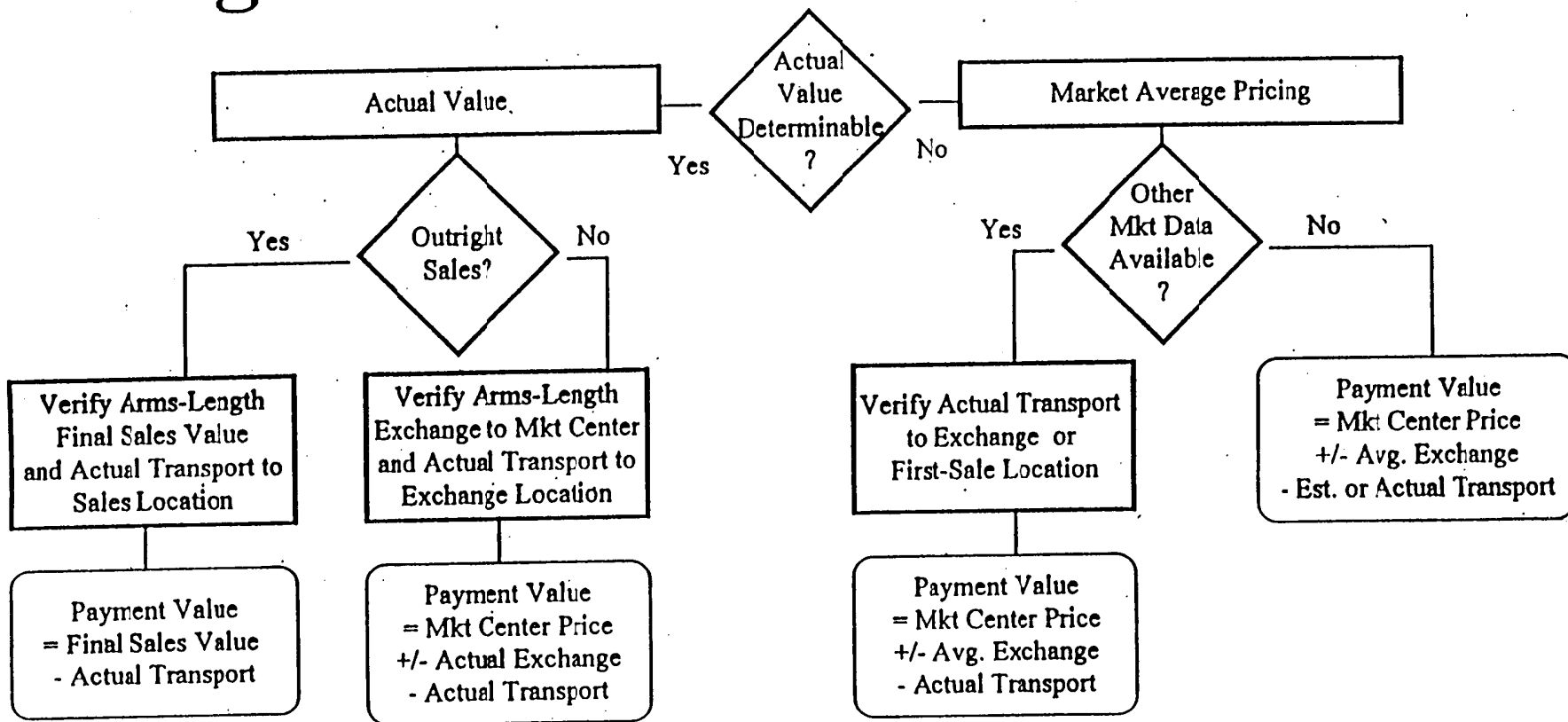
# Suggested Revised Payment Basis

## Summary

- All payors provide MMS with complete marketing information
  - Kept confidential by MMS
- Valuation basis:
  - If actual value or actual exchange to market center is known, use actual value received:
    - Outright sale
    - Exchange to market center
  - If actual value or exchange not known, use Market Average Pricing
    - Established by MMS based on actual reported data



# Suggested Revised Payment Regulation Flow Chart Summary



# Required Data Provided to MMS

- **Outright sale terms**
  - Declare if arms-length sale
  - Define price basis and premiums
    - Include all formulae used
  - Define actual transportation costs from lease to sale location
    - If using buy/sell for transport, define all buy/sell terms
  - Define actual quality adjustment terms
    - List actual quality parameters (API, S, ...) if using a “deemed” price adjustment factor



# **Required Data Provided to MMS**

## **(cont.)**

- **Exchange terms**
  - **Declare if arms-length exchange**
  - **All pricing terms and formulae for all locations**
  - **Location of each exchange point**
  - **Define actual transportation costs from lease to first-sale location**
    - **If using buy/sell for transport, define all buy/sell terms**
  - **Define actual quality adjustment terms**
    - **List actual quality parameters (API, S, ...) if using a “deemed” price adjustment factor**



# Market Average Price Basis Recommendation

- Use “Adjusted NYMEX Settle” or “Posting-Plus” as Basis for Cushing, OK Delivery Price
  - “Adjusted NYMEX Settle” is similar to “Posting-Plus”, except that no posted prices are required
    - Continues natural hedge for refiners like posting
    - Oil conceptually priced during delivery like posting
    - Can be exactly bought/hedged/traded/sold on the NYMEX settle prices
    - Corrects arbitrage potential from simply using NYMEX settle prices alone





# **“Adjusted NYMEX Settle”**

## **Calculation**

- **NYMEX Time Factor Differential (“TFD”)**  
determined every trading day while the  
delivery month is prompt month on NYMEX
- **Daily TFD’s averaged together to determine  
appropriate average TFD**
  - Average TFD determined prior to delivery month
- **Actual delivery price is average of NYMEX  
Prompt settle during delivery month, plus or  
minus average TFD**



# Time Factor Differential Formula

$$\text{TFD} = \text{MTM}_{(1-2)} \times A/D + \text{MTM}_{(1-3)} \times B/D$$

Where:

$\text{MTM}_{(1-2)}$  = NYMEX settle price for Prompt month, minus settle price for 2nd month on strip

$\text{MTM}_{(1-3)}$  = NYMEX settle price for Prompt month, minus settle price for 3rd month on strip

A = Number of days in delivery month when Prompt month traded on NYMEX is the first calendar month following trading month

B = Number of days in delivery month when Prompt month traded on NYMEX is the second calendar month following trading month

D = Number of days in delivery month



# Example of Time Factor Differential Calculation

Performed on September 3, 1996 for October 1996 Deliveries

NYMEX Settle Prices on September 3, 1996:

Oct 96: \$23.40, Nov 96: \$22.66, Dec 1996: \$22.05

During October delivery month, November will trade as prompt through October 22, then December will trade as prompt. October has 31 days.

$$TFD = (23.40 - 22.66)(22/31) + (23.40 - 22.05)(9/31) = \$0.917/\text{BBL}$$

This means that a party selling October crude oil based on the NYMEX settle prices during the month of October could receive \$0.917/BBL over the average of the NYMEX prompt settle prices during October, including weekends and holidays in the average at the same NYMEX value as the previous trading day.



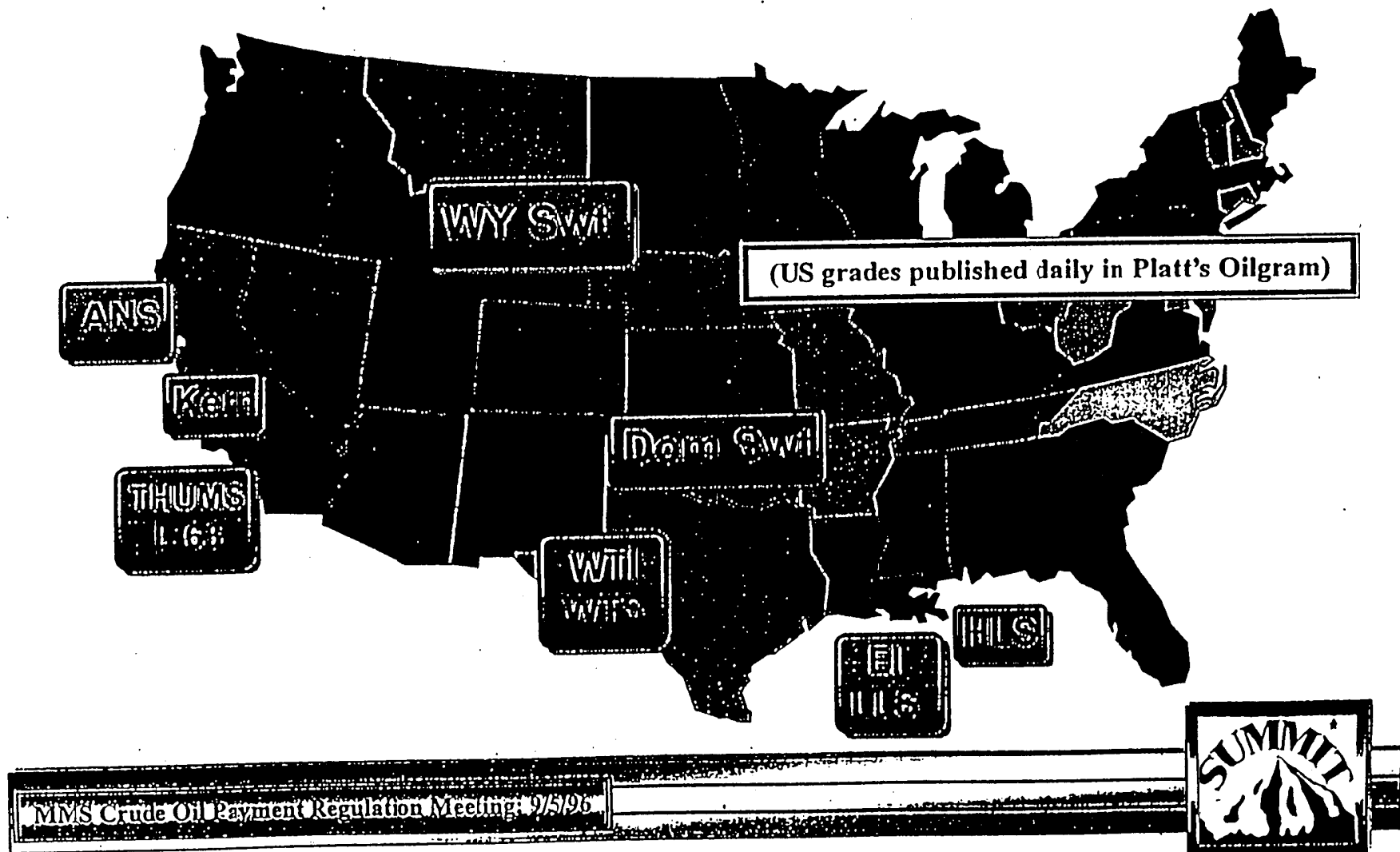
# Market Average Price Basis

## Recommendation (cont.)

- Use Platt's Oilgram differentials for grade trade differentials between Cushing and major market centers
  - Using average of trading days while delivery month is prompt on cash market
    - From 26th day of two months prior to delivery, through 25th day of one month prior to delivery
  - Platt's is not perfect, but currently best reflects actual market values
    - Recognize potential to evolve/improve



# US Grade Trading Locations Published in Platt's Oilgram



# Market Average Exchange Differential Establishment Procedure

- Payors report actual exchange terms
- MMS calculates and publishes market average every 6 months ✓
  - Based on common aggregation points to public spot market centers
  - MMS establishes market differentials in areas where no reported data is available
    - Extrapolating from known areas
- Payors can challenge MMS differentials



# **Procedure for Challenging MMS Market Average Exchange Differential**

- **Burden of proof on challenger to show that MMS differential is not reasonable**
  - (If a party has actual exchange values, then it is supposed to pay based on those values)
- **If MMS agrees with challenger, after reviewing actual data, it has two choices:**
  - Apply to challenger only
  - Modify Average Exchange Differential for all affected parties



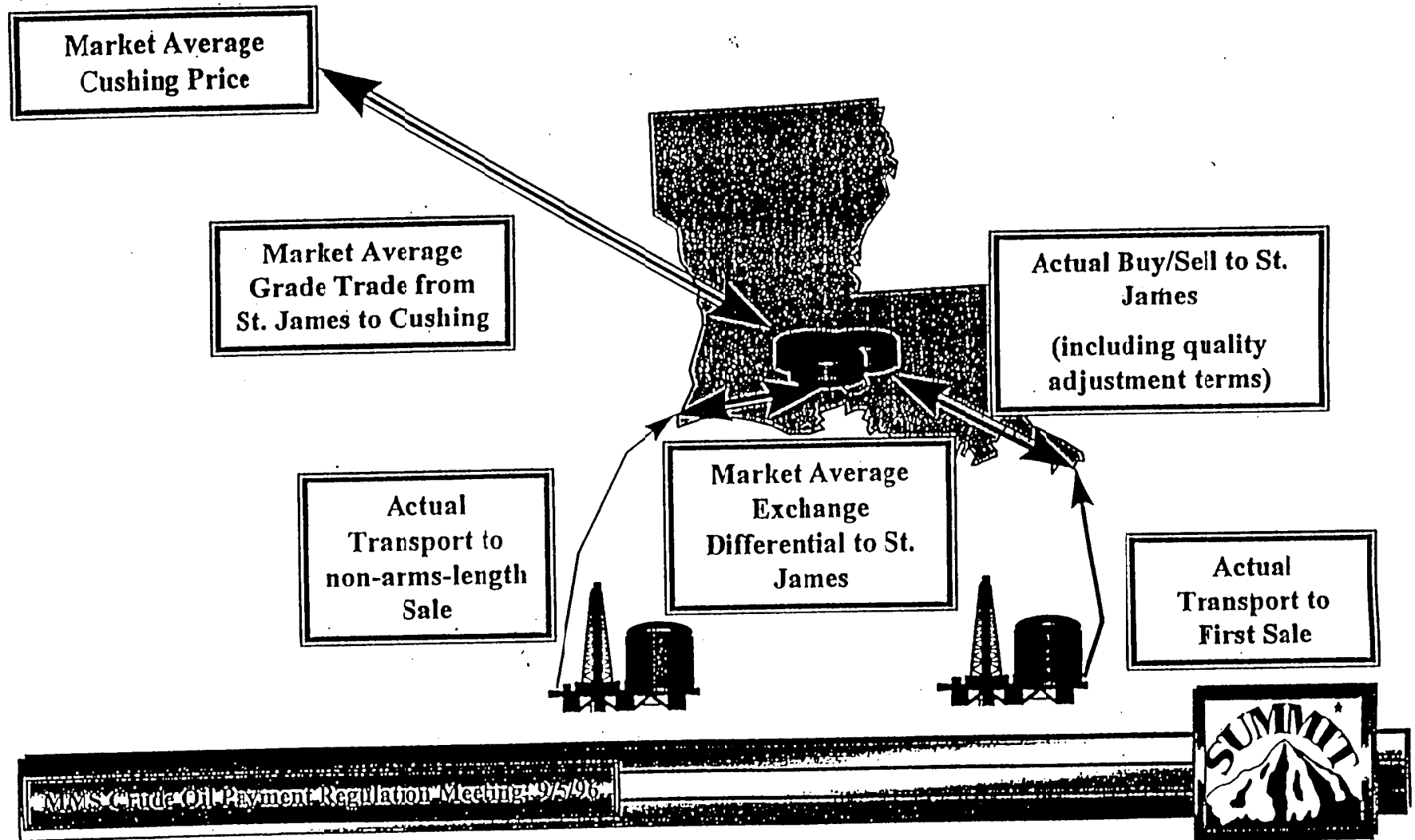
# Use of Mean or Median for Average Exchange Differential

- Should be volume weighted calculation
- Use of the Mean should provide best approximation to total value which would have been received by MMS if all parties had paid on actual receipts.





# Conceptual Summary of Suggested Revised MMS Payment Regulations



# Attributes of New Suggested MMS Crude Oil Payment Regulations

- Matches payment regulations to typical crude oil marketing practices
- ✓ • Allows companies to continue paying on actual receipts where appropriate
- Market average price differentials could be used to establish “pseudo-postings” to fit into existing oil company payment systems with essentially no system modifications required

